

REMARKS

Claims 1-30 were pending. Claims 3, 6, 10, 17 and 20 were previously withdrawn. Claims 1-2, 4-5, 7-9, 11-16, 18-19 and 21-30 stand rejected. Claims 1, 7-8, 14-15, 21-22, 24-25, 27-28 and 30 are amended. No new matter is being added.

Response to Rejection Under 35 USC §101

The Examiner rejected claims 1, 4, 7, 8, 11, 14-15, 18 and 21-30 under 35 USC §101 as directed to non-statutory subject matter. Independent claims 1, 8, 15 and 21 as amended recite statutory subject matter. Specifically, claim 1 as amended describes a method for compressing input data. For example, as amended, claim 1 recites (with emphasis added):

A computer-implemented method for compressing a stream of data, the method comprising:

- applying a dynamic prediction function to the data by using dynamically predicted coefficient values associated with the data according to a non-linear feedback to yield **a first compressed stream of data;**
- applying a Golomb coding function to the first compressed data to yield **a second compressed stream of data;** and
- outputting the second compressed stream of data to a computer-readable storage medium.

Claim 1 relates to compressing a stream of data through a statutory process that transforms the data to a different state or thing as a series of steps are performed. For example, given a stream of data, the claimed invention creates a first compressed stream of data by using dynamically predicted coefficient values according to non-linear feedback; and generates a second compressed stream of data by applying a Golomb coding function to the first compressed stream of data. The claimed invention further outputs the second compressed stream of data to a computer-readable storage medium. Thus, the claimed invention transforms a stream of data to a

first compressed stream of data (i.e., a different thing at a different state), and further transforms the first compressed stream data to a second compressed stream of data (i.e., a different thing at a different state). Such transformation clearly recites a statutory “process” under 35 USC 101. Support for the amendment can be found at Specification at paragraphs [0014] and [0038] and throughout the entire Specification.

Thus, claim 1 is directed to statutory subject matter, and the rejection should be withdrawn. Dependent claims 4 and 7 are also directed to statutory subject matter.

Independent claims 8, 15 and 21 recite similar language to claim 1. Thus, claims 8, 15 and 21 are directed to statutory subject matter, and the rejections should be withdrawn. Dependent claims 11, 14, 18 and 22-30 are also directed to statutory subject matter.

Response to Rejection Under 35 USC §102(b)

The Examiner rejected claims 1, 2, 7, 8, 9, 14-16, 21 under 35 USC §102(b) as anticipated by Nakayama *et al.* (6,711,295).

As described above, the claimed invention allows a lossless encoding system to perform two-level compression of a stream of data (i.e., input data), first by a dynamic predictor which uses dynamically predicted coefficient values associated with the input data according to non-linear feedback, resulting in a first compressed stream of data. As such, the predicted coefficient values are re-evaluated on the fly using the non-linear feedback, enabling additional compression of the input data because of more accurate predictions (Specification, ¶[0004] and ¶[0030]). The second-level compression is achieved by an adaptive Golomb encoder that further compresses the first compressed stream of data to yield a second compressed stream of data (Specification, ¶[0014] and ¶[0035]-[0042]).

Nakayama does not disclose or teach yielding a first compressed stream of data by using dynamically predicted coefficient values associated with input data according to non-linear feedback. Nakayama discloses an encoding method whose objective is to perform Golomb-Rice coding efficiently (Abstract). The Examiner cited Fig. 1 item 102 (i.e., a prediction converting circuit), Fig. 4 and column 5, line 14-column 6, line 47 as disclosing the claimed feature. However, Nakayama here merely describes generating a prediction value of an input pixel using its neighboring pixels and further correcting the prediction value by a liner error feedback circuit 402. As such, Nakayama limits its prediction value generation to a fixed number of neighboring pixels of an input signal and does not teach or disclose using dynamically predicted coefficient values associated with the input data according to non-linear feedback.

Thus, claim 1 is patentable over Nakayama, and the rejection should be withdrawn.

Response to Rejection Under 35 USC §103(a)

The Examiner rejected claims 4-5, 11-12, and 18-19 under 35 USC §103(a) as unpatentable over Nakayama.

The Examiner admits that Nakayama does not disclose color transformation from RGB domain to YUV domain as claimed, but takes Official Notice that such color transformation is well-known in the art. The color transformation from RGB domain to YUV domain enables the claimed invention to remove redundancy between color channels of the input data, thus allowing for better compression since most the image data is moved into a single channel (Specification, ¶¶[0015]-[0016]).

Nakayama discloses encoding RGB color images using the Golomb-Rice encoder explicitly in the RGB domain, and each color component needs only to be encoded in the same manner as that used for the monochrome image signal (3:11-18). As such, without RGB-to-

YUV color transformation as claimed for multi-valued color image, Nakayama is not able to transform RGB data into YUV data and achieve better compression by moving most of an image data into a single channel (i.e., the Y channel in YUV domain). Consequently, Nakayama suffers degraded compression performance. Further, applying RGB-to-YUV color transformation (i.e., Official Notice) to Nakayama as suggested by the Examiner is improper under MPEP 2143.01 since it would change Nakayama's principle of operation because each color component "need only to be encoded in the same manner as that used for the monochrome image signal" (3:16-18). Thus, it is not obvious to one of ordinary skill in the art to apply the claimed color transformation to Nakayama's embodiments.

Therefore, claims 4-5, 11-12, and 18-19 are patentably distinguishable over Nakayama.

Conclusion

For at least these reasons claims 1, 8, 15 and 21 are patentably distinguishable over the cited reference. Therefore, Applicants respectfully request that the Examiner withdraw the rejection. The dependent claims are also patentable over Nakayama, both because each depends from patentable independent claims, respectively, and because each also recites its own patentable features.

The Examiner is invited to contact the undersigned by telephone in order to advance the prosecution of this case.

Respectfully submitted,
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